DOCUMENT RESUME

ED 201 259 HE 013 736

AUTHOR Mares, Kenneth R.; And Others
TITLE Description and Evaluation of the 1980 Summer Scholars Program.
INSTITUTION Western Missouri Area Health Education Center, Kansas City.
SPONS AGENCY Health Resources Administration (DHEW/PHS), Bethesda, Md.
PUB DATE 80
NOTE 41p.

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Access to Education; *Allied Health Occupations Education; *Career Awareness; *Career Exploration; Career Guidance; *Educationally Disadvantaged; Higher Education; Medical Schools; *Minority Groups; State Universities; *Summer Programs
IDENTIFIERS *University of Missouri Kansas City

ABSTRACT

The University of Missouri, under a contract with the Health Resources Administration, has planned and developed an Area Health Education Center (AHEC), whose purpose is to address the problem of underrepresentation of minority and educationally disadvantaged students in educational programs for health professions. Activities range from early identification of promising students to provision of continuing education for practicing professionals. A committee developed the University of Missouri at Kansas City (UMKC) School of Medicine's Summer Scholars Program, focusing on two priorities: student identification and selection, and curriculum development. Five program objectives were determined: (1) to help students solidify decisions to enter the health professions; (2) where appropriate, to encourage students to pursue careers at the UMKC School of Health Sciences; (3) to help develop academic study skills, interpersonal and communication skills, and interview skills needed to enroll in and successfully complete educational programs; (4) to provide realistic information about education requirements; and (5) to provide experiences to clarify perceptions of career roles. The curriculum includes learning and interview skills and introductions to the fields of nutrition, cardiopulmonary resuscitation, child health care, dentistry, the emergency room, medicine, nursing, pharmacy, radiology, support services, and surgery. The program was introduced in July 1980. Student reactions to the program, recorded in student logs and by survey, were very positive, although some felt that certain program elements were repetitive and could have been more tightly scheduled or focused. Student statements are appended. (MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED201259
HE013736
WMAHEC

DESCRIPTION AND EVALUATION
OF THE
1980 SUMMER SCHOLARS PROGRAM

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

WMAHEC

Kenneth Mason

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Western Missouri Area Health Education Center

DESCRIPTION AND EVALUATION OF THE 1980 SUMMER SCHOLARS PROGRAM

Dr. Kenneth R. Mares,
Director of Evaluation - WMAHEC

Dr. Daniel U. Levine,
WMAHEC Evaluation Consultant

Dr. Willie McLemore,
Assistant Professor of Medicine - UMKC, and
Director of Minority Recruitment - WMAHEC

Mr. Elisha Verge,
Urban Outreach Coordinator - WMAHEC

Ms. Carol Grimaldi,
Administrative Aide - WMAHEC

TABLE OF CONTENTS

I. BACKGROUND

II. ROLE OF THE UMKC SCHOOL OF MEDICINE AND THE WESTERN MISSOURI AREA HEALTH EDUCATION CENTER

III. PROCESS OF PROGRAM DEVELOPMENT

IV. PROCESS OF STUDENT IDENTIFICATION AND SELECTION

V. PROCESS OF CURRICULUM DEVELOPMENT

VI. SUMMARY OF CURRICULUM CONTENT

VII. ORIENTATION

VIII. STUDENT LOGS

IX. STUDENT REACTIONS AND SUGGESTIONS

X. APPENDIX A

BACKGROUND

The problems inherent in the significant lack of minority group persons and disadvantaged students in the health professions have been widely reported and documented during the last decade.

In 1970, 11.1 per cent of the United States population were blacks; yet they accounted for only 2.12 per cent of the country's physicians, dentists and related practitioners. In 1968, only 2.7 per cent of the country's first-year medical students were blacks.

Medical schools began to respond formally to black under-representation in 1968, when the Association of American Medical Colleges (AAMC) recommended that "medical schools must admit increased numbers of students from geographical areas, economic backgrounds and ethnic groups that are now inadequately represented." In 1969-70, an AAMC task force investigated minority under-representation in medical schools and recommended that 12 per cent of all first-year medical students be blacks by the 1975-76 academic year. Despite efforts that substantially increased the numbers of black medical students, this goal was not achieved. In 1975-76, only 6.8 per cent of all first-year medical students were blacks.

In a recent study by Sleeth and Mishell the factors that strongly influence black representation in medical schools were examined in some detail. The authors concluded that "effective programs for black high-school students are essential to correct black under-representation in medical schools." They also state that "effective high-school programs would also benefit other minority groups--American Indians, Chicanos and mainland Puerto Ricans--who are also

seriously under-represented in the medical profession." The authors conclude by saying:

> The key to affirmative action lies in increasing the pool of qualified black applicants to medical schools, rather than trying to achieve appropriate black representation from too limited a pool of black applicants. More black high-school students must receive the academic preparation to achieve in college. Blacks must attain a high level of academic achievements in college if they are to compete for admission to medical schools on an equal basis with other groups. Programs that help black high-school students receive such preparation, together with support programs at the college level, are most likely to ensure the full participation of blacks in a manner consistent with the democratic values of American society.

While there is no clear consensus as to the specific problem which accounts for the disproportionately low numbers of minorities in the health careers, there is agreement on at least three factors which contribute to the problem: (a) lack of role models and appropriate motivation, (b) lack of information and counseling at an early stage in the students' education about health careers, and (c) lack of appropriate learning skills (for example, note taking, reading comprehension, test-taking) necessary for the educational preparation required in most health careers.

Recent efforts by schools of health professions to find viable solutions to the problem have resulted in the development and implementation of career exploration and study-skills programs. Characteristically, these programs are oriented toward high school and college age students and are held during summer months. Some programs concentrate on providing practical experience in various

health professions by using students as laboratory assistants or allowing them to rotate through the various units in hospitals and teaching facilities. Other programs focus on academic enrichment in various subject areas, test-taking, and study skills. A few programs combine both work and study. All programs in some way address the objectives of providing students with a realistic picture of requirements for entering and pursuing a health profession, motivating students to enter a health profession, and helping them to be successful in their educational pursuits.

ROLE OF THE UMKC SCHOOL OF MEDICINE AND THE WESTERN MISSOURI AREA HEALTH EDUCATION CENTER

The University of Missouri, under a contract from the Health Resources Administration, is one of 11 original universities to plan and develop Area Health Education Centers (AHECs). The purpose of AHECs is to address the problem of maldistribution of health practitioners through educational programs. The spectrum of activities in an AHEC ranged from the early identification of promising minority group and disadvantaged students who may be interested in pursuing a health career to the provision of continuing health education for practicing health professionals.

In performance of the 08 year contract, the Western Missouri AHEC (WMAHEC) project was specifically required to:

(1) Identify disadvantaged and minority group high school students in the WMAHEC region who give evidence of potential and ambition to develop their abilities for health service careers, and to recommend and assist in the placement of these students in post secondary education institutions in one of the health professions.

In his inaugural address of October, 1978, Harry S. Jonas, M.D., Dean of the UMKC School of Medicine, outlined his goals and aspirations for the school. One goal centered on the challenges of attracting minority and disadvantaged students. He stated, "We must continue to search for an innovative solution to minority and disadvantaged student selection, ways to identify that spark, that devotion, that degree of motivation and willingness to learn which allows us to properly identify the potential for success."

It was within this commitment that the planning, development, and implementation of the Summer Scholars Program (SSP) was begun.

PROCESS OF PROGRAM DEVELOPMENT

In early April, 1980, the WMAHEC Summer Scholars Program Working Committee was established to plan, develop, and implement a pilot educational/participatory activity that would introduce selected high school students to the myriad of opportunities in the health care system.

Although goals and objectives for this effort were not specifically stated in written form, the program intended to accomplish the following: (a) help to solidify the students' decisions to enter a health career field; (b) where appropriate, encourage students to pursue health careers at the UMKC School of Health Sciences; (c) help students develop academic study skills, interpersonal and communicative skills, and interviewing skills needed to enroll in and successfully complete programs in higher education institutions; (d) provide realistic information about education requirements for entry into health fields; and (e) provide experiences to clarify

perceptions of health roles.

The Summer Scholars Program Working Committee consisted of: Ms. Virginia Calkins, Assistant Dean for Student Affairs, UMKC School of Medicine; Ms. Ann Johnson, Special Assistant to the Superintendent of the Kansas City Public School District; Dr. Willie McLemore, Assistant Professor of Medicine at UMKC and WMAHEC Director of Minority Affairs; Dr. Ken Mares, WMAHEC Director of Evaluation; and Elisha Verge, UMKC Special Services Counselor and WMAHEC Outreach Coordinator. Francoise King, Learning Specialist; Dr. Jim Yoder, Counseling Psychologist; Mr. Mark Mitchell, Year 6 Medical Student and member of the Council on Selection's Minority Recruitment Committee; and Bill Frederick, Truman Medical Center, later joined this committee. It is important to note that although the above mentioned names constituted the Summer Scholars Program Working Committee, many people at the Truman Medical Center, the Children's Mercy Hospital, and the UMKC Schools of Dentistry and Pharmacy helped in the development of the program.

The committee's work was divided into two categories. The first category constituted the process of student identification and selection. The second category constituted the development of the curriculum for the program.

PROCESS OF STUDENT IDENTIFICATION AND SELECTION

The first task of the Working Committee was to appoint a subcommittee and assign the task of student identification and selection to them. The entire committee asked that Ms. Virginia Calkins, Ms.

Ann Johnson, Mr. Elisha Verge, and Dr. Willie McLemore serve in that capacity. Each accepted and Dr. McLemore served as chairman of the sub-committee. The first task at hand was to decide on the specific target population that would be eligible to participate. After considerable discussion, it was decided to admit only high school sophomores and jniors who were currently enrolled in the Kansas City Public School System (KCSD). The reason for this decision was because this school system had the highest percentage of minority and disadvantaged students. In addition, the KCSD has only 9 senior high schools, which provided the program with a manageable number of schools to visit in order to personally inform school officials and students about the summer opportunity.

After that decision an appointment was made with Dr. Wayne Dotts, Associate Superintendent of the KCSD, to discuss in general terms the goals and object of the program and to ask for KCSD cooperation in helping to select students. He enthusiastically accepted the idea and prepared a memorandum to each high school principal asking their cooperation.

A detailed application was then devised which asked prospective students to: (1) Prepare a response to the following statement: "I want to participate in the Summer Scholars Program because . . ."; (2) List all extracurricular activities and community involvements in your high school career; (3) Obtain written permission from your parents or guardian to participate in the program; (4) Forward to the SSP Selection Committee an official and complete high school transcript; (5) Forward an assessment by the student's counselor of

the student's aptitude for careers in the health sciences; and (6) Forward an assessment by the student's science or math instructor of the student's aptitude for careers in the health sciences.

After the committee prepared application forms and a detailed letter of explanation, both the forms and the letter were printed and taken to each high school by Mr. Elisha Verge and Dr. Kenneth Mares. The principal or vice-principal and counselors were briefed at length concerning the program. They were asked to identify students who they thought would benefit by participation in a Summer Scholars Program. Students were allowed approximately three weeks to complete all required materials. Application materials were mailed to Mr. Verge's office. Any materials post marked after May 30, 1980 were declared ineligible for consideration.

The selection sub-committee established seven categories within which each applicant would be evaluated. The categories were:

- Motivation expressed in the Statement of Intent written by the student on his/her application;
- Grades and grade patterns;
- Course selection;
- Achievement and skill test scores and patterns;
- References from the counselors and math/science instructor together;
- Out of class activities and achievements;
- Elisha Verge's personal evaluation of the student.

By June 3, 1980, 66 applications were received. All applications had the required materials to be considered for participation in the program.

Each student's application was reviewed independently by each member of the selection committee. For each of the categories a student could receive a maximum of 5 points, or a total of 35 points from each evaluator. If each evaluator assigned 35 points to a student's application, that applicant would then have amassed a total of 140 points.

After the independent evaluations were completed, the applicants' scores were combined and divided by four to create a composite average score. These scores were then ranked from the highest (35) to the lowest (12). The students with the twenty-four highest scores were then selected to participate in the program. Letters were then forwarded to the twenty-four students notifying them that they were eligible to participate in the program. Students who did not score in the top twenty-four were sent letters stating that they were not selected to participate in the Summer Scholars Program, but were encouraged to join a newly formed medical explorers post sponsored by Dr. McLemore and the Truman Medical Center.

Of the 24 students invited to participate in the Summer Scholars Program 22 accepted the program's invitation to participate.

On July 9, 1980, each of the 22 students was forwarded a letter providing details concerning the orientation for the Summer Scholars Program.

PROCESS OF CURRICULUM DEVELOPMENT

The second aspect of the Summer Scholars Program involved the cooperation and participation of the UMKC Schools of Health Sciences, Truman Medical Center (TMC), and the Children's Mercy Hospital (CMH), in designing and developing the curriculum for the program.

First Dr. Kenneth Mares and Dr. Willie McLemore outlined a protocol-process that would facilitate the development of the program. The process was as follows:

Meetings were held with Dr. Harry S. Jonas, Dean, UMKC School of Medicine, and Dr. John Ashley, Executive Director of the Truman Medical Center, to discuss in very general terms the ideas and concepts of the Summer Scholars Program. Both agreed that the idea was excellent and pledged the cooperation of their institutions. Later a joint memorandum was prepared for all potential participants (staff at the School of Medicine and TMC) in the Summer Scholars Program, urging them to cooperate.

Shortly thereafter discussions were held with Dr. Robert Fairchild, Director of Clinics, CMH, and Mr. Larry Harkness, Administrator, CMH, to seek their hospital's participation and support in this educational endeavor. Both pledged the support of CMH. In addition Mr. Gregg Andrews, Executive Vice-President of the Academy of Health Professions (AHP) pledged the support and help of his organization as well.

The next task was to develop the "curriculum" of experiences for the students who would be selected to participate. The committee decided that it was important to provide as general and comprehensive an overview of the opportunities in the health care system

as possible. In addition, the program wanted to review with the student the important academic and social skills needed to compete for entry and success in health education programs.

Dean Jonas made it very clear to the SSP Committee what his expectations were when he said:

> We look to attract to the School of Medicine, and to our other health science schools at the University of Missouri, some of the best and the brightest students in Kansas City. And yet, many students at this stage of the game aren't really sure of what they want to do and they haven't really completely decided. So, I think a program such as this should give students an opportunity to really see . . . and see early . . . about health careers, and to be exposed to what hospitals are all about, and what patients are all about, and some of the health schools and how they work.

Dr. John Ashley spoke in the same vein when he said:

> Truman Medical Center exists, primarily, to take care of sick people. And as Summer Scholars at our institution, the students will become a part of the process of caring for sick people. I want you to know that Truman Medical Center probably cares for the majority of ill people that there are in this city, who have some of the most desperate kinds of problems, who also have some of the highest expectations. And as part of our process for caring for those people, they /the Summer Scholars/ are going to become just like one of our employees, just like one of our volunteers. And people are going to be counting on them to be concerned about them, to be as much a part of caring for patients as any other employee. We want them to learn from this experience. We want to learn <u>from</u> them from this experience.

The committee decided that the students should have as much "hands on" experience as possible and that the "curriculum" would be designed to allow the participating students to observe and participate where appropriate in actual patient care.

The committee reviewed and discussed many potential opportunities and activities for the students and finally decided on the following:

Childrens Mercy Hospital

Hearing and Speech

Laboratory Services

Orthopedics Clinic

Physical Therapy

Specialty 3 (Surgery Clinic)

School of Dentistry

Nutrition Program

Tour/Discussion

School of Medicine

Interviewing Activity

Learning Activity

Truman Medical Center

Biomedical Services

Clinic Orientation

Clinical Labs

CPR Certification Class

Emergency Room

Finance and Admissions

Food Services

Medical Clinics

Medical Records

Medicine

Nursing

Patient Advocate

Pharmacy Service and Pharmacy School Presentation

Radiology

Rehabilitation Services

Respiratory Therapy

Social Services

Surgery Clinic and Operating Room

Volunteers and Tours

The process of development for each of the activities was under the leadership of a person designated by either the hospital or one of the UMKC Schools of Health Science. Mr. Bill Frederick coordinated the development of all non-clinical activities at TMC, Dr. McLemore coordinated development of clinical experiences at TMC, Dr. Robert Fairchild coordinated the development of all of the activities at CMH, and Dr. Pat Randolph and Ms. Diane Beard coordinated activities developed by the School of Dentistry. Learning-skill experiences and interviewing activities were coordinated by Francoise King and Dr. Jim Yoder, respectively.

Each activity was designed for at least one half day or a multiple of one half days. For instance, students spent only one half day at the UMKC School of Dentistry, but spent one and one half days in the interview activity. Students were also allowed one half day of elective time. This time was spent in an area that a student wanted to experience again or investigate an area that had not been planned for the program.

SUMMARY OF CURRICULUM CONTENT

Learning Activities

This part of the curriculum focused on:

1. The identifcation by students of learning skills in which they needed greater development in order to compete successfully in a health science program.

2. The introduction and teaching of those skills. For example, many students perceived a need for greater competency in textbook reading, note taking, test taking, study techniques, vocabulary building, and memorizing. Students chose the areas of greatest concern and the instructors addressed as many as time permitted. Materials used in skill instruction had health-science content. Selected books were put on reserve in the medical school library.

Interview Training Program

The Interview Training Program was designed to facilitate participant growth, understanding, and development in:

1. The nature of the academic institution admittance interview, from filling out the applications to the actual interview.

2. Insight and grasp of significant variables related to an interview process, such as setting, questions, and human rights.

3. The development of interview skills through learning exercises and through specific role-playing and video-feedback in practice interviewing.

These understandings and skills were learned through two basic learning sessions and role-play video-taping of simulated interview sessions, as well as other related exercises.

Nutrition

The principles of nutrition were reviewed, with emphasis on current controversies and developments. Topics included the role of the Federal government in nutrition, food additives (with special focus on controversial additives), non-sucrose sweetners, vitamins and food supplements, and the U.S. dietary goals as they relate diet to disease. The information was given in a slide presentation that encouraged student participation. In addition each student was provided a five-day diet inventory to be used with computer analysis.

Nutrition

The second nutrition session involved a trip to a Milgram Food Store which was used as a "lab" to discuss nutrient content of various foods, the forms in which foods appear in the supermarket, the necessity of food sanitation, and food preparation.

CPR - Cardiopulmonary Resuscitation

Students were taught how to sustain a victim who has stopped breathing or whose heart has stopped beating. Students were tested and certified in basic life support.

Students were also shown how to revive a choking victim.

Children's Mercy Hospital

The Children's Mercy Hospital introduced the students to practices involving the child as the patient. Students became familiar with the areas of hearing and speech, surgery clinic, laboratory, Cabot (outpatient) Clinic, physical therapy, orthopedic clinic, and some non-clinical occupations such as medical records and admissions.

Dentistry

Students were exposed to the clinical aspects of dentistry, having the opportunity to be paired with a dental studentfor part of the afternoon.

Students also viewed a presentation about dentistry as a profession, and had the chance to speak with professionals about their careers.

Emergency Room

At the beginning of each group session, a registered nurse talked with the students about emergency health services, and provided an in-depth tour of the Emergency Room. Each student was assigned to work with and observe a member of the Health Team. Each day a member of the Health Team talked about his or her particular function and how it ties in with the rest of the team to accomplish the goal of providing competent emergency health services.

Medicine

The experience in the Department of Medicine was two-fold. Students were assigned to Docent rotation where they observed the inpatient care of patients by the health care team. This team consisted of a docent (attending physician), residents, students, pharmacist, nurses, dietician, and librarian. The patient's care was discussed and a selected number of patients were visited.

Medicine

Students also were in the medicine outpatient clinic. They accompanied the medical student seeing patients. The patient's problems were discussed with the Docent and the appropriate treatment determined.

Nursing

Students were given an overview of nursing procedures on the nursing rotations and the clinical orientation. The intent of the rotations was to familiarize students with inpatient care as much as possible.

Pharmacy

The Truman Medical Center pharmacist discussed his role and responsibilities in drug therapy and drug information in a general setting. An administrative official of the UMKC School of Pharmacy discussed the requirements and preparation needed to enter the School of Pharmacy.

Radiology

In the Department of Radiology, students observed various radiological procedures and discussed their interpretation with the radiologist.

Support Services

Eleven Departments at Truman Medical Center participating in this program described the types of services they provided, the kinds of jobs found in the various departments, and the education and training backgrounds needed in those jobs.

Support services examined at TMC included rehabilitation, pharmacy, food services, social services, respiratory therapy, volunteers, medical records, biomedical, finance, patient advocate, and clinical laboratory.

Surgery

The experience in the Department of Surgery involved the orthopedics outpatient clinic. Students observed the care given to fractures and other skeletal problems. Whenever possible, students were encouraged to observe surgical procedures.

ORIENTATION

The Summer Scholars Program began on July 28, 1980 with an orientation and tour of the UMKC School of Medicine and the Truman Medical Center.

The day began with a welcome from Dr. Willie McLemore and senior officials of participating institutions in the Summer Scholars Program.

Following the welcome, Dr. McLemore presented to each of the students an information packet with schedules and other important information which were to be used by the students. A general review of the specifics of the program was completed at that time.

Following that activity, students viewed the TIP Health Career slide-tape presentation as background for the many health career opportunities available to them. Following the audio-visual presentation, questions and answers concerning those opportunities were reviewed.

Each student was then introduced and was allowed to discuss his or her specific expectations concerning the program.

Following that, Dr. Pat Randolph, Professor from the UMKC School of Dentistry, distributed a diet inventory for the students to record their nutrition intake for a five-day period of time. That record was to be kept and forwarded to Dr. Randolph for analysis and discussion later on in the program.

The students were then given a tour of the UMKC School of Medicine. Following the tour, the students and parents had lunch at the Health Sciences Building.

Following their lunch, the students were given a brief introduction to the Truman Medical Center by Mr. Bill Frederick and then were given a tour of the facility. At the end of the tour the students were dismissed for the day.

STUDENT LOGS

Each student was required for the duration of the Summer Scholars Program to prepare a daily log in which to list the significant activities or events of that particular day, and to choose two of these activities or events and tell how and why they were significant.

Students also were required to record technical procedures that they had the opportunity to observe of participate in, and also were required to record any skill development which took place on that particular day. A list of terms which were learned during that day's activities was recorded as well. In addition, students were required to write a paragraph that reflected their reactions and feelings on that particular day's experiences. Comments recorded in the logs described the wide range of experiences in which students had engaged and the impact of their experience on their attitudes and viewpoints. Examples of statements from the student logs were as follows:

> Student #16: We talked to the surgeon about his job and what he did to obtain his position. He told us about the different opportunities available as a surgeon, what the benefits were, and also the disadvantages. He was very interesting to talk with. I thought he was one of our best speakers because he was open and frank about his occupation.
>
> We got to go through the surgical area and see how each room is equipped. The surgeon we talked to showed us how several of the machines were used. We saw a few operations through the windows. I liked being able to get a close-up view of a real operating room.

Surgery was a very rewarding experience. I watched a nerve being repaired. We could all see the muscles and ligaments. I also saw a car accident victim. She had to have a lot done on her. I got to see all the techniques that O.R. uses for anesthisia.

Student #14: When I went to Cabot Clinic I didn't think it was important, but it was. They help people who can't speak English, who are mostly Mexican. They give these people great help. They help them run their family properly, keep up their child's health and about B.C. They teach them how to speak English. This clinic is very important to CMH and the Mexicans, Whites, and Blacks.

Student #2: Cabot clinic is significant to me because it shows how important a neighborhood clinic can be. I think it is very hard to work with people in a different culture because you have to do things a certain manner.

Student #14: I saw the equipment they used in the Dental School and how they used them. I thought they only needed to know about teeth but I found out they need to know about the whole body. Their program is quite interesting. They deal with people on a one-to-one correspondence which I like. They seem to care about how the patient feels while they are working on the patient's mouth.

I saw students cut up bodies and they showed me how my body is made and functions. I hope the other kids can see what I saw because they will understand their body even more.

Student #9: The dental school was very organized and I enjoyed my afternoon. We observed the dentist working on a patient's teeth. The students were able to talk with us and give advice. We also saw a film on dentistry and the school. They were very helpful in advising us in the right path.

Student #5: This morning was very meaningful. I got to observe some X-rays that I had seen done before and many I had not. I got to see a mammogram and a veinogram, both of which I had never seen before. It was fascinating to watch the equipment used on radioactive dye X-rays. The mammogram was equally interesting. I decided radiology might not be as monotonous as I thought. I observed that the people in the field are pleased with it and are like tradesmen when they might decide if the films are too dark or too light, if they are off-centered and if they are seeing what they are supposed to be seeing.

Student #20: In pharmacy today we learned all about the medicine procedures in the hospital. We learned the system they use , how they stock their supplies, how they pass them out and how they go about getting supplies they don't have. We toured all the pharmacy departments and asked as many questions as we wanted. We also watched a film on pharmacy and talked about pharmacy school.

Student #10: Biomedical Engineering was a good section to see. There wasn't a lot of time wasted by spending hours there. After 40 minutes we had learned that the Bio-Medical Engineers were the mediators between the doctors and the machines. They play a very important role in the hospital health field. Without them the nurses and doctors wouldn't know if a patient's heart was collapsing or the machine was just breaking down.

Student #10: I went home tired today. I don't think I ever did so much in such a small amount of time. Nurses and therapists deserve every cent of their pay. The nurses on 6-Gold really work. I had a hard time keeping up with mine. This unit had many different kinds of patients with specialty surgeries. The first patient we saw was a mentally retarded, cerebral palsy, 3-year-old patient. Her scoliosis was so bad she had to be strapped to the wheelchair. It was hard to tell if she was comfortable. I was able to feed her some orange juice but wasn't able to tell if she liked it since she couldn't communicate.

In the Intensive Care Unit the nurse explained the difficulty of each child. From being a blue baby to having pneumonia, each child had a different problem. The baby with pneumonia was being fed oxygen from a hand pump. They were thinking about switching him to Children's Mercy, since they have a Nursery 3, if he didn't get better soon. Many of the children were fattening and being sent home. This is a very rewarding part of medicine.

Student #16: We dicsussed medical terms derived from Greek words, geographical terms, geometric shapes, agricultural comparisons, zoology terms, war activities, musical instruments, and utensils. I think it's easier to remember a word if you can relate to something. I thought this was a fun discussion.

Student #10: The Med Clinics and the Medicine Rotations have really changed my mind about medicine. When I started the Summer Scholars Program I wanted to be a surgeon or a pediatrician. In the back of my mind,

though, I was saying to myself, 'What if you hate working with the people?'. I had cancelled a Family Practice out of my mind, but now after I have been with the patients and med students I come to the conclusion that 'I love people and want to work with them for the rest of my life!'. A Family Practice would let me have a business of my own, but yet I would be rendering a most needed service to my community.

Student #10: Med Clinic was the best. The students explained everything we wanted to know and I really enjoyed the examinations and the analysis for each patient. The lady who was diagnosed as a hypochondriac was an interesting case. I would definitely like to follow her case to see if she had _____syndrome or if she was a true hypochondriac, or whatever.

The best parts of this hospital are the Med-Clinics. I can see why the students do the interviewing and examining. They have the opportunity to learn so much from the patients. Even I learned a lot about symptoms and diseases. The first patient I saw had a stomach virus which she had contracted from her daughter. The second came in with an acute case of hepatitis and was admitted to the hospital. (The patient did not look sick but his blood test said he was.) The third patient was drinking and smoking too much and had gastritis. The fourth had a heart murmur and was going to be admitted.

Student #14: In Learning Activity I learned how to listen. Because you can hear and not listen. Now I apply myself. It will become quite handy in the future. I also learned my characteristic traits. It is very important to know who you are. I found out that I will be very good in the social service jobs. I love working with people.

Student #9: Learning activity came to an end today. Study is important to all students. This activity has aided me to make my study habits better. Note taking, reading for comprehension, skimming, listening, questioning, concept learning are the various techniques that we have talked about.

Student #14: Laboratory was very interesting. We went to so many different labs. They were hemotology, toxicology, blood bank, bacteriology. They were all pretty interesting. I learned a lot from each of them. Toxicology was quite interesting, it seems like a good field to go into.

Student #19: Speech pathology is significant to me because sign language has always interested me, and learning to use sign language efficiently and effectively has fascinated me for quite some time. I would like to become more involved with the deaf and hearing impaired.

Student #5: The medicine clinic was significant to me because I got to observe patient handling by doctors, the operation of a docent team, and physical checkups of patients. I learned as much about the doctor's role in medicine here as I did in the emergency room. I thoroughly enjoyed it.

This afternoon at the med clinic was fascinating. I felt accepted as a serious student by the staff and so was allowed to help in taking B.P. although it was checked. After I took it and other minor things that made me feel as if I was considered confident and trustworthy. After seeing the things the Med students get to do and after talking with them about the program, I am extremely interested in attending school here.

The most interesting event of this week was visiting the Medicine Clinic. I enjoyed the exposure to the patients, and following the Med students. They answered all my questions and made me try new things. They talked very favorably about the school and got me very interested in attending here.

Student #14: Speech and Hearing was really great. I found out so many reasons for such impairments, and how to get them corrected. It showed me how to check to see if a baby or child can hear or speak. It seems like a very interesting field to get into.

Student #5: The workshop on interviewing skills was an awakening experience. I learned many things about interviewing, such as the role of body language and the art of interview skills that I had never even thought about.

Taping this afternoon was a much less nerve-racking experience than it was before. It showed me that practice does make perfect. Also, interviewing is a lot easier when you have a person who makes you feel at ease!

Student #14: To learn about the nutrients your body needs is very helpful. I learned how to eat right so my body can function properly. It is important to know how to keep your body in shape because it is the only one you have and you would want a long, happy life.

To go on rounds with a dietician is very helpful to you. It lets you know who is eating right according to their body ailments. It lets you know what is good for one person isn't necessarily good for you.

Student #20: Food service at TMC was a lot better than I thought it was going to be. First of all, we were talked to by the head of the department. She told us about the systems and procedures that took place in food service. Later, we were assigned to a dietician who took us around to see how menus were done, plus sat in conference and went on rounds with the doctors. I didn't know a dietician had that much patient contact.

Student #20: The Emergency Room is a very exciting place to be. Although things were kind of slow today, we still had things to watch. When we arrived at the Emergency Room, already there was one patient. A middle-aged man had been beaten up and had a large cut in his head. They didn't stitch it up, but put it together with butterflies. We saw an asthmatic and the procedures done to get her breathing back to normal, it required many shots. We also saw a man get the upper part of his lip stitched up from an injury. All these activities happened in the morning.

STUDENT REACTIONS AND SUGGESTIONS

At the conclusion of the program, students were requested to complete a questionnaire soliciting their reactions and suggestions for the future. All but one of the 22 students filled out the questionnaire.

The first item was an open-ended question which asked respondents to "Please write a statement concerning what the Summer Scholars Program meant to you." Nearly all the responses to this item were favorable comments indicating how much the students felt they had benefited from and enjoyed participating in the program, particularly as regards their preparation and motivation to enter medicine or other health science fields after graduation. Responses of students to this item are shown in Appendix A.

The second item was an open-ended question which asked, "Looking back, what were the strong points of the Summer Scholars Program? Please explain." Students' responses listed a variety of

activities and aspects they felt made the program strong. Illustrative excerpts from each of the students' response were as follows:

Student #1: Surgery, interviewing workshops, physical therapy. Surgery was great because of Dr. Snider's support of the program and partially due to the fascinating subject. Interviewing workshops were fun and really helpful. Physical Therapy at CMH was an interesting experience.

Student #2: The strongest points of the Summer Scholars Program are: the professional treatment, seeing the patients, talking with med students, variety, cooperation, and all the little extras--the lab coats, lunch, the stipend, book log, and the everpresent endouragement, no matter what field we went into.

Student #3: Being able to observe the different things.

Student #4: Hands on experience with the doctors and students (med). The workshops on interviewing, learning skills, and nutrition. The lectures on parts of the body helped me to understand what the doctors were saying and where it was located. Our freedom. The hospital's participation. Rotation gave us a chance to see a lot more and get a better explanation of things better than if we were all together.

Student #5: The interviewing activity. Surgery. The School of Dentistry.

Student #6: Surgery, physical therapy and CPR, Med Clinics. Everyone gave their support.

Student #7: Surgery. Following behind the doctors was also good. It showed me how a doctor really operates, and gets along with the patients. Emergency Room. CMH showed me how to work with all the kinds of little kids to make them have a fulfilled life.

Student #8: CPR training. Interview also deserves a big plus. As far as for the best medical departments, surgery (TMC), and dentistry, hearing and speech (CMH), and respiratory therapy were the most prepared and informative for all of us.

Student #9: Support by all the people involved with us. The Learning Activities, the Interviewing Skills, the Medical Terminology (classes).

Student #10: The kids were not working on a competitive level.

Student #11: Learning Activities. Interviewing techniques. We also got a bird's eye view of how the doctors operate under stress or pressure and just how they operate in general.

Student #13: Different programs and departments we were allowed to view.

Student #15: Learn more about the kind of person I am.

Student #16: Truman Medical Center, the Dental School, and Children's Mercy Hospital. Learning Activities.

Student #17: Different phases of hospital life, the learning activity, interviewing with the videotape machine.

Student #18: E.R., Med. Clinic, and Surgery.

Student #19: Surgery, E.R., CPR, Radiology. Also the freedom we were given.

Student #20: Exposure to the hospital. Exposure to the medical staff and students. The variety of programs. We had a chance to voice our thoughts.

Student #21: Interview, the Learning Activity, med clinic and surgery.

In addition, students also were requested to respond to the question, "Looking back, what were the weak points of the Summer Scholars Program? Explain." Here, too, a variety of aspects and activities were cited in the responses. In particular, a number of students felt that some of the activities and the topics were boring, usually because they were seen as involving too much time in repetitive observation.

Although nearly all the students were positive about the program overall, some felt it was not as valuable as it might have been had the schedule been tighter and more focused on highly interesting and useful activities.

These comments have been studied carefully by all the persons

connected with the program, and will be given considerable attention in planning future programs. Weak points cited in the student responses were as follows:

Student #1: The weak points were mainly the hospital support services and the labs. One major point of weakness was that many programs were allotted much too much time so we just ended up watching TV.

Student #2: Lack of communication, time inconvenience, different program structure. Some of the activities should have been shortened and others lengthened. More active involvement things. This program might be improved by having a three or four week program introducing students to the different aspects of hospital care and business, and then devoting the last week to the electives.

Student #3: Same tours over and over again.

Student #4: Boring subjects.

Student #5: Tours. CMH Surgery Clinic. Social service was not very enjoyable. Medical records wasn't very interesting.

Student #6: Not actively participating in enough activities. Near-total observation got a little boring at times, we couldn't do anything.

Student #7: Social Service, Admissions, etc.

Student #9: Spending entire mornings or afternoons at a station or two which only take a half hour to 45 minutes to understand its operations.

Student #10: It needed to be more organized.

Student #13: Unorganization of our schedules.

Student #14: The lack of communication between the organizers of this program and the different fields the scholars have to go to.

Student #15: Some of the activities were boring or too short for the time that was to be taken up.

Student #16: Some departments at Truman Medical Center and Children's Mercy Hospital were not as prepared to talk with us as some of the others were. Medical Terminology course. I think that there should have been more time allowed for each lesson.

Student #17: Elective blocks. I feel as if we should have had a few more electives than we did.

Student #18: Many times too much time was allotted for departments - Social Service, Volunteer, Finance and Admissions, Medical Records, etc. If there each could be given ½ hour and squeezed into 1 or 2 days it would be better. A chance at more electives would be great. EEG should be included in separate group schedules.

Student #19: Medical Records, Admissions, Patient Advocate, Social Service, and Pharmacy didn't really interest me or the majority of the students.

Student #20: Assigned to one place more than once. Although the same thing might be in different hospitals they are still basically the same.

Student #21: The weak point is the time limit on departments.

In addition to the open-ended items, students completing the Summer Scholars Program also were asked to provide responses indicating whether specific activities and topics in the program were helpful or not helpful. The question used for this purpose was as follows: "Below are listed the activity areas in the Summer Scholars Program. Please rate each activity relative to how helpful it was for you in understanding what is involved with that specific occupation." Response categories were in Likert-form with "Very Helpful" at one pole, "Not Helpful at All" at the other pole, and three intermediate spaces to check responses more neutral than the two poles. Responses of the 21 students who completed the questionnaire are shown in Table 1.

TABLE 1

RESPONSES OF STUDENT PARTICIPANTS REGARDING THE HELPFULNESS OF SPECIFIC ACTIVITIES AND TOPICS IN THE SUMMER SCHOLARS PROGRAM

Location and Activity or Topic	Very Helpful	(Positive)	(Neutral)	(Negative)	Not Helpful at All	No Response
Children's Mercy Hospital						
Hearing and Speech	10	3	2	0	0	6
Laboratory Services	3	4	2	5	4	3
Orthopedic Clinic	3	3	6	4	0	5
Physical Therapy	16	3	0	1	0	1
Surgery Clinic	4	2	3	3	4	5
School of Dentistry						
Nutrition Program	8	7	5	0	0	1
Tour/Discussion	12	9	0	0	0	0
School of Medicine						
Interviewing Activity	19	2	0	0	0	0
Learning Activity	14	5	2	0	0	0
Truman Medical Center						
Admissions	1	1	4	7	6	2
Biomedical Services	1	3	9	4	2	2
Clinical Orientation	9	2	6	3	0	1
Clinical Labs	3	2	7	5	3	1
Pulmonary Resuscitation	20	0	1	0	0	0
Emergency Room	17	4	0	0	0	0
Finance and Admissions	1	1	7	2	9	1
Food Services	5	2	7	3	4	0
Medical Clinics	15	4	2	0	0	0
Medicine	14	4	2	1	0	0
Nursing	7	6	4	1	0	3
Patient Advocate	1	3	6	5	5	1
Pharmacy Service	2	6	8	2	1	2
Radiology	7	11	1	0	0	2
Rehabilitation	6	4	7	0	0	4
Social Services	0	1	2	7	10	1
Surgery	21	0	0	0	0	0
Volunteers and Tours	2	2	3	9	4	1
Miscellaneous						
Orientation	16	4	1	0	0	0
Cabot Clinic	12	1	0	0	0	8
Log Records	10	6	5	0	0	0

As shown in Table 1, the majority of the responses were toward the positive pole among the five response categories. Among the 30 items, for 18 a majority (of the students who responded) checked either "Very Helpful" or the category representing "Helpful." Conversely, there were only six items for which half or more of the responding students checked "Not Helpful at All" or the category representing "Not Helpful." These six items respectively involved "Children's Mercy Hospital Laboratory Services" and the following Truman Medical Center activities and topics: "Admissions"; "Finance and Admissions"; "Patient Advocate"; "Social Services"; and "Volunteers and Tours." It is apparent that most of the activities and topics were beneficial in terms of students' perceptions that they had participated in a valuable experience. It also is apparent, however, that programming for future years should be modified so as to reduce or improve those few activities which did not appear as helpful as most of the others.

Finally, two additional items requested responses concerning effects of participation in the Summer Scholars Program. The first was worded as follows: "Because of the Summer Scholars Program will you take any additional classes in science or mathematics when you start school next year?" In response, nine of the 21 students responded affirmatively, and then specified courses in physics, chemistry, biology, calculus, and other math and science subjects they would add to their high school course of study. (Altogether, 25 courses were specified by the nine students who responded affirmatively.) The second item stated: "To what extent did the Summer Scholars Program help you better understand the academic requirements to pursue

a career in the health sciences." Seventeen of the twenty-one students responded that the program had been "Very Helpful," and the remaining four indicated it had been "Helpful." Thus the Summer Scholars Program appears to have been unquestionably successful in terms of helping students understand the academic requirements for pursuing a career in the health sciences.

APPENDIX A

STUDENT RESPONSES TO THE ITEM, "Please write a statement concerning what the Summer Scholars Program meant to you."

1. Prior to participating in the Summer Scholars Program, I thought of medicine as something that might be neat to get into, but I had very limited knowledge of the field. The SSP really gave me a good overview of various fields in medicine, and convinced me that I want to become a doctor. It has made me realize the importance of the various support fields in medicine, and convinced me that I want to become a doctor. It has also helped me prepare for entering med school. I feel now that I'm prepared to interview successfully for entrance into school, and know enough to realize this is for me.

2. The Summer Scholars Program gave me the extra assurance and confidence I needed and everyone needs when trying to make a major decision like attending Medical School. The program gave me insights about the medical fields the 6 year Medical School. In four short weeks it showed me how a hospital worked and introduced me to the people who make it work. It convinced me that I like people and want to work with them to help them. I found out I liked to use my analyzing and investigating talents, it is a challenge. There are great rewards in the field of medicine if someone is willing to put in the time and effort to develop their talents, whatever they may be. Whether it is in the field of research or gynecology, there is a place for you.

3. It meant being able to participate with other students who were interested in medicine of some sort and also being able to find

out more about medicine than I had known before. Now I know some sort of field I want to go to and I'm really happy that I got a chance to be in the Summer Scholars Program.

4. This program was a chance that I couldn't pass up, a chance that might never be offered to me again. The Summer Scholars Program was one very important factor in deciding my career goals that will last a lifetime. It meant learning more about the various fields of medicine. It meant seeing the doctors' view on matters rather than just the patients' view. It meant being involved in the hospital situations instead of just looking in. This program meant an experience that I will never forget nor want to forget. The things that I learned in this program I will retain for the rest of my life.

5. For me it meant an opportunity to get an actual hands-on experience of what it is to be a doctor. It's a complex occupatuon, but one that's rewarding. The program was very helpful seeing the reality of the profession I hope to get into.

6. The Summer Scholars Program showed me what the majority of the medical professions were all about. I now see that I don't want to be a doctor (though I never did) and that other branches of health sciences are a little more appealing (radiology, genetics). I was able to gain insights as to what to do. Suggestions - Shorten the program to 3 weeks of observation, reducing or eliminating the unimportant areas (admissions, Social Service, etc.). Then allow the last week for electives. This would give us more options and reduce

repetition. Don't have us go to the same branches in both CMH and TMC. Don't repeat something so many days (ER, Surgery), instead let us choose it several times during elective week. With the week of electives at the end, we would have seen everything and know what to ask for, too.

7. The Summer Scholars Program has meant a lot to me. I came here knowing nothing and I am leaving here with knowledge I never thought existed. I am so glad I was picked, I couldn't imagine how much I've learned. This Program is so great I think every city should have one. I know we are the future of tomorrow and it is nice to know people are training us for it. This has been an experience of a lifetime. I'd like to thank everyone of you. I wish you success in future programs. Hope to see you in two years. Best wishes.

8. The Summer Scholars Program was beneficial for all. For me, I learned a great deal about the persons and departments involved in medicine. At first (for example) I thought I wanted to go into medical research and that was strictly all. Because of the program, which has exposed me to many of the other fields of medicine I've found that this now is not my only choice. For example, surgery and pediatrics now interest me. I have definitely learned a lot in this program.

9. Personally, the Summer Scholars Program meant the opportunity to examine more closely the wide range of career opportunities available in the health field.

This program also meant a closer relationship with doctors and student doctors (also people involved in the health profession) so

that I now understand more closely what they go through.

10. I personally never had any experience in a hospital atmosphere. The Summer Scholars Program was an open door, waiting for me to come in and explore what is inside. I feel that the program has been a door opener for me. I was allowed to see situations that others had no idea about. It has been a push for me to find the few areas that I am really interested in for a career. I think that a program such as this is good for anyone. What you go into for your life is an important decision to make. It is true that it is only a step but that step may save you from heading in the wrong direction or aiming you towards the right road of a successful career.

11. I think this program was really good. And I feel that it was a very needed program. I think this program gives students insight on what the medical field is about. I feel that this program helped me confirm my belief that I wanted to be a physician. This program really opened my eyes and made me aware of the ways I must prepare myself for this type of program.

In this program I learned there are many aspects as physicians and Health Related Careers to look into before I make my choice. This was a rewarding experience. This was also an educational experience. Now I know what the academic requirements and such things are. This experience helped me to grow in many ways and meet many people. I enjoy the chance to participate in such a good experience. Thank all of the Directors.

12. The Summer Scholars Program was to me a bridge between a dream world and reality. I have always thought about going into some facet of the medical field, but I really didn't know what it was like until I was accepted into this program. It has from day one opened my eyes to fields of medicine that I have never heard about. I have learned in four weeks more than I could have learned in a year at school. This was because I was there experiencing for myself. I sincerely hope that this program will continue and expand so that others will have the opportunities and experiences that I have had. Thank you.

13. When I first found out I was not accepted into the SS Program I was very disappointed. Later I found out I was selected as an alternate. I was both pleased and disappointed because I could attend but I would not be receiving a stipend. I attended the program and am pleased to say that I have met a lot of very nice people. I don't think any amount of money could be as important as what I have gained.

14. This Summer Scholars Program meant a great deal to me. It helped me realize what I want to do with my life. The dentistry portion of the program confirmed my interest in becoming a dentist. Through this program I came to grasp what my true feelings are. I am glad the program got started and went very successfully. I wish it the best of luck in the future and hope it will benefit someone the way it has benefited me.

15. The Summer Scholars Program has not only been fun, but educational as well. The program has helped me to better my

studying skills, improve all of my interviewing techniques and learn a lot more about the health fields that are available. It has also given me an insight to a field that I found I was not really interested in, and helped me to select a career which I feel will satisfy me in my later years.

I wish that I were a junior in high school, instead of a senior. That way I could attend the program again next year. Believe me, it has been an enjoyable experience. I'm really pleased that I was selected. Thank you very much!

16. The Summer Scholars Program is one of the best activities that I've ever participated in. I thought that this was an excellent opportunity for anyone interested in a health-related occupation. It has helped me to confirm some ideas that I've had for my future career, as well as disregard others. I hope this type of program will be continued for other students and that an advanced program can be established for those of us who were here this year.

17. The Summer Scholars Program was a wonderful experience for me. I'm glad I was a part of the very first group and hope that others may have the same opportunity for years to come. It was my advantage to get a first hand look at more phases of hospital life than I ever guessed there could be. I would like to thank everyone who had a hand in putting this program together and selecting me to be a participant.

18. The Summer Scholars Program helped me see the "inside" hospital, to see the role of the people who work in an over-all

health care plan. It reiforced my career choice and opened up many resources for information never seen or known before. It made me realize that people in the medical field are humans too and have the same feelings we have. It helped me learn how to get along with others better. Overall - it has meant a great deal in influencing some of my life's plans and goals. This was a great program and I feel it should be continued and expanded upon!

19. The Summer Scholars Program meant a lot to me. Through this program I learned much information that will help me in life as well as a medical career if I choose one. I wish there was some way to extend it. I met many new friends. It was fun, exciting, interesting, and a nice taste of reality. I really wish there was some way I could continue or do it again.

20. The Summer Scholars Program meant very much to me. First of all, just being chosen for this once in a lifetime experience meant a lot to me. How many high school students get to just walk into a hospital and be a part of the medical staff for a while? Not many I know. It was a privilege to be given to a young adult my age thinking about medicine. This program showed me the continuous pressure and stress put on doctors that I had never seen before. I know it was hard being a doctor, but it got me thinking about things a doctor goes through that I never thought of before. The program has really prepared me for the hard career ahead by exposing me to things I really need to consider before entering college. I got to talk to many doctors and students about what the career is like and what can I do to make it easier for me to handle.

Most of all the program meant to me a chance to find myself and find out exactly what I am capable of doing and handling. It exposed me to surgery, something I never thought I would be strong enough to look at, but after seeing it at a young age, (still in high school) I know I can handle it later in life. I won't be in the dark about technical procedures doctors perform and I owe this all to the program I was introduced to this summer. I truly appreciate my chance for being involved in the program.

21. The Scholars Program gave me an insight into what it would be like if I went into the medical school and also it let me make a decision whether or not I really wanted to be a physician. From the program I also gained new friends. So overall, the program was great and I hope to see it grow throughout the country.